

CLAIM AMENDMENTS

1 1. (Currently amended) An apparatus for applying a thin
2 film coating to a substrate comprising:

3 a vacuum chamber connectable to a pump adapted to
4 evacuate said chamber;

5 at least one rotatable crucible in said chamber;

6 a substrate holder mounted for rotation in said chamber
7 receiving a substrate to be coated and juxtaposed with said
8 crucible;

9 a mechanical shutter in said chamber interposable between
10 said crucible and said substrate;

11 a high-energy electron beam source for heating a
12 component of a coating to be deposited upon said substrate in said
13 crucible;

14 a radio frequency or pulsed direct current source
15 connectable connected to said substrate holder for producing a
16 plasma around said substrate and imparting a self-bias to said
17 substrate holder poling said substrate holder cathodic;

18 means for feeding a gas mixture to said chamber including
19 at least one gas reactive with said component to form a coating on

20 said substrate; and
21 a low energy electron source independent of said high
22 energy electron beam source for ionizing said component ~~to reduce~~
23 and reducing said self-bias by at least 80% and deposit a reaction
24 product of said component and said at least one gas on said
25 substrate, said shutter being movable from ~~[[one]]~~ said at least
26 one rotatable crucible and said substrate to permit ionization of
27 said component.

Claim 2 (cancelled).

1 3. (Currently amended) The apparatus defined in claim
2 ~~[[2]]~~ 1 wherein said chamber is formed with an insulated feed-
3 through for connecting ~~said source~~ one of said sources to said
4 substrate holder.

Claim 4 (cancelled).

1 5. (Currently amended) The apparatus defined in claim
2 ~~[[4]]~~ 3 wherein said crucible is electrically heated.

Claim 6 (cancelled).

1 7. (Currently amended) The apparatus defined in claim
2 [[4]] 3 wherein said source is a radio frequency source.

3 Claim 8 (cancelled).

4 9. (Currently amended) The apparatus defined in claim
5 [[4]] 3, further comprising another crucible containing a
6 respective component capable of forming a reaction product which
7 can be deposited on said coating.

Claim 10 (cancelled).

Claim 11 (cancelled).